Naturalist notebook

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Thames Science Center

JAN. 1971

NATURALIST NOTEBOOK

JANUARY 1971 VOLUME VII NO. 1

CONTENTS

Front Cover
"CARDINALS"
—Drawing by Martha Capizzano

CHILDREN'S SECTION

Nature Calendar 1
Along the Shore 4
Squirrels vs. Bird Feeders 6

ADULT SECTION

Articles of Adult Interest 8
From Executive Director's Desk
Director's Desk. 10
Visit to the Marsh. 11
Beneath the Ice. 13
Field Notes. 15

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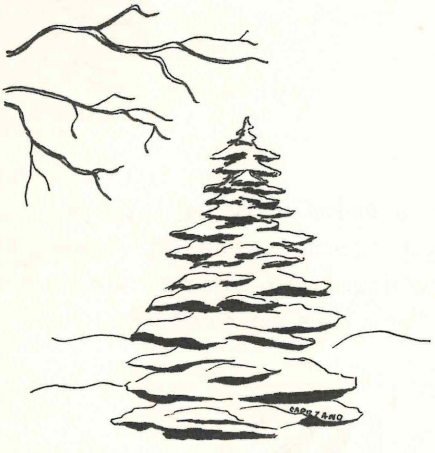
JANUARY

The Month Of Stately Evergreens

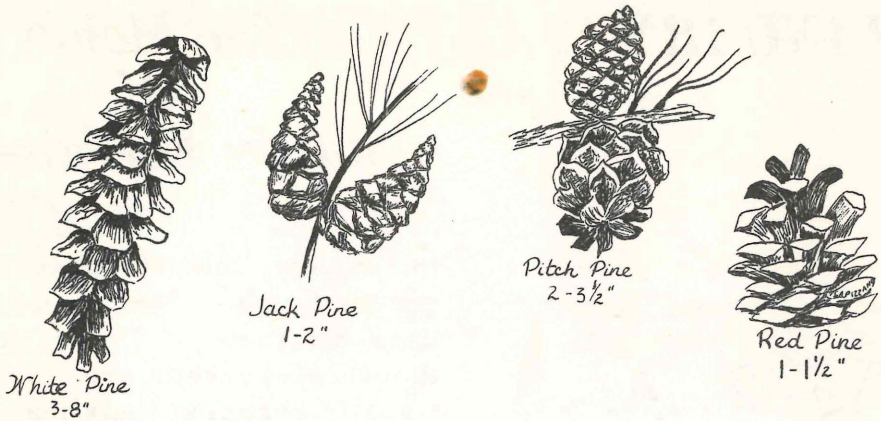


After a fresh snow fall in January, the stately evergreens brighten the bleak and barren forests of winter. Although evergreens are continually shedding their leaves throughout the year, old leaves are replaced with new ones so that their branches remain green year around. An evergreen standing alone or in a grove provides excellent shelter from wind, cold and predators for birds and other wildlife.

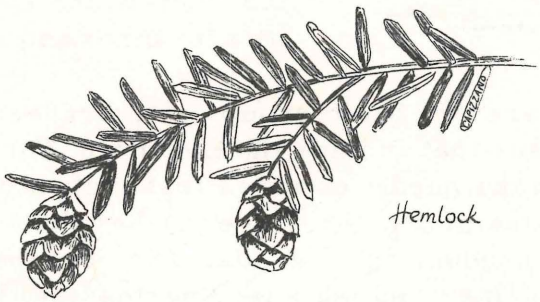
There are two basic groups of evergreens, the broadleaf evergreens that include the mountain laurel and rhododendron, and the needle conifers that include the pines, spruces, and hemlock. They are further distinguished by the way they produce their seeds. The cone-bearing trees are gymnosperms, and the angiosperms are flowering plants that often bear fleshy fruit.

The easiest way to identify pine trees is by close examination of their leaves...the needles. Needles grow in clusters and how many are in each cluster as well as their length will give an accurate identification of some common native pines. Often, however, the size and shape of the pine cone is needed to aid in positive identification. Here are some examples:

	No. in cluster	Needle length
WHITE PINE	5	3-5"
RED PINE	2	4-6"
PITCH PINE	3	3-5"
JACK PINE	2	1-1½"



Spruces prefer to grow in a relatively moist area, and the short, $\frac{1}{2}$" needles grow singly from a straight woody twig. The needles on spruce trees are diamond-shaped when cut on a cross section. The entire tree has an erect, rigid appearance. (Picture, Page 1.)



Hemlock trees have a very graceful, lacy appearance from a distance. The needles are flat, about $\frac{1}{2}$" long and have two thin, white, parallel lines on the underside. The tiny cones are only about one-half to three-fourths of an inch long and hang on the tip of the delicate twigs.

Rhododendron and mountain laurel are both broad leaf evergreens that bear clusters of flowers in late spring. The mountain laurel leaf is eliptical in shape and about 3 to 5 inches long, and that of the rhododendron is oblong, 5 to 12 inches long. The leather-like leaves grow from contorted, twisted branches, and though the plants may grow twenty or more feet tall, they are generally low and shrubby.

THE JANUARY CALENDAR

January is the month of cold and snow.

Dec. 30 - Jan. 10... The latest sunrises of the year. The sun comes up at 7:13 A.M.

Jan. 1... Welcome 1971.

Jan. 3... Pine Siskins were common at feeders by this time last year.

Jan. 4... The Earth will be in Perihelion... 91,400,000 miles from the sun.

Jan. 5... Twelfth Night ... Hast thou taken down thy Christmas tree?

Jan. 10... Look for the Long-eared Owl and Evening Grosbeaks.

Jan. 11... The full Cold moon.

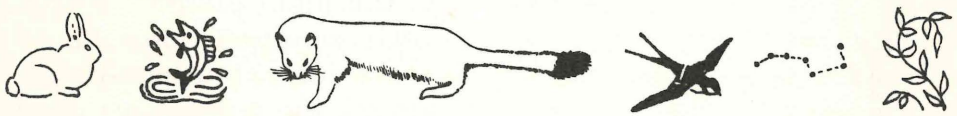
Jan. 12... Might a Bald Eagle be spotted again this year?

Jan. 12... Rough-legged Hawks come from the North to hunt rodents along the shore.

Jan. 17... Watch for Short-eared Owls sitting in fields and on fence posts.

Jan. 18... Look for Mercury at its brightest peak - 5:47 A.M. in the western sky.

ED. NOTE: The observations listed here are dated as they were first noted in January, 1970. Check these dates and those for the remainder of '71 to see if yours are earlier, later or about the same.

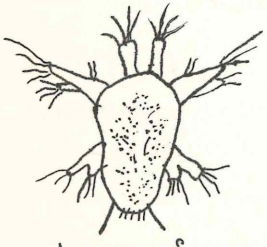


ALONG THE SHORE

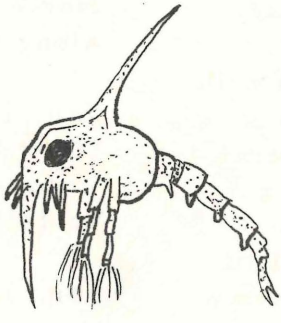
by BARBARA KASHANSKI

We return to the tiny "wanderers"--or plankton. Last month I wrote about plant or phytoplankton, and I said that in this issue I'd write about the animal forms of plankton or zooplankton--and so I shall.

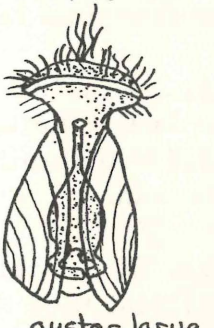
If you remember, phytoplankton was the first and basic energy link in every food chain of all marine animals. Zooplankton can be considered the second link in the energy food chain. Most of the tiny and usually microscopic animals that are called zooplankton look like some weird creatures from outer space. Actually, a large percentage of zooplankton are the larva or immature forms of many familiar sea animals such as crabs, barnacles, snails, mussels, oysters, jellyfish, worms and fishes. Also included as zooplankton are the one-celled animals called protozoa and a very important group of tiny crustaceans called amphipods, isopods and copepods. Do you remember that the single-celled, many-shaped diatom was the most important member of the plant plankton? The little copepod holds the same important position among the animal plank-



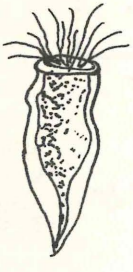
Larva of a Barnacle

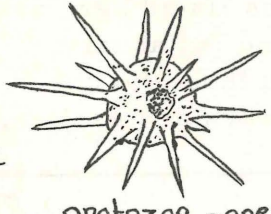


Larva of a crab

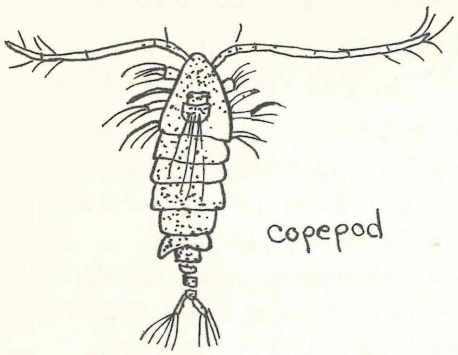


oyster larva



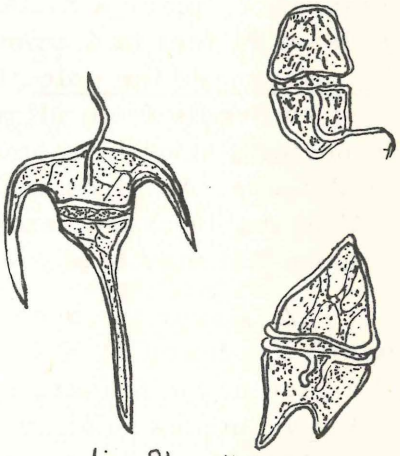


protozoa - one celled animals



ton. Copepods are tiny shrimp-like creatures about as big as a small pinhead, but remember, like the diatom, probably there are more copepods in the world than any other multicelled animal, and they are a prime source of food for many different larger animals from the smallest sardines to the biggest whale. They are so important in the marine food chain that any other animal plankton which feed on copepods (such as the comb jellyfish) is considered a dangerous enemy by the fishermen who want the copepods left alone to feed the fish he is going to catch.

There is another group of plankton I must tell you about, but I don't know where to put them. Most of us have been taught that a living thing is either plant or animal. Well, believe it or not, there is a group of microscopic organisms that can be called both plant and animal. They are tiny one-celled dinoflagellates. These strange organisms can either make their own food like other plants, or they can capture their own food like an animal. It also can move about by itself to some extent by means of whip-like feelers or appendages. Dinoflagellates are a favorite food of copepods... copepods are a favorite food of herring ...herring are a favorite food of many people, and here we are again with a basic marine food chain... the first link of which is the small but mighty PLANKTON.



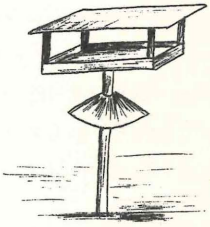
SQUIRRELS vs BIRD FEEDERS

–Illustrations and Text
by MARTHA CAPIZZANO

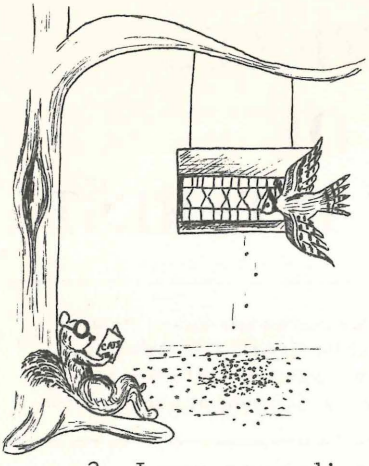
Because squirrels do not hibernate, they need a readily available supply of food for the cold winter months. In the wild, squirrels bury acorns and other nuts in the ground, and they dig for them as needed. Although squirrels near homes do the same, they nevertheless enjoy the luxury of leisure, and the food most readily obtainable is in bird feeders. There they sit... and eat...and sit...and eat...and the birds have to resort to the leftover morsels that are on the ground. Some birds such as the juncos prefer feeding on the ground, but others such as the cardinals and the finches prefer to select sunflower seeds from the feeder.

There is no fool-proof solution to this problem; there is always at least one squirrel that out-smarts any ingenious invention, but here are a few possibilities:

1. Use a smooth metal pole for your feeder that is about six feet high. A squirrel can grasp a metal one that is rough or has nicks, and he can jump up to the feeder from the ground if the pole is too low. As an added assurance, place a metal shield around the pole that is at least $1\frac{1}{2}$ feet in diameter and five feet from the ground. Do not grease the pole. It will not prevent squirrels from climbing, but more important, it will become caked with bird seeds. As birds eat the seeds, it will probably cause damage to internal organs that may lead to death.

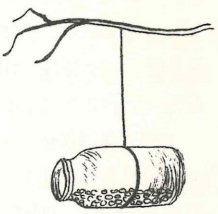


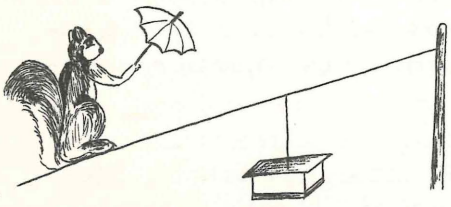
2. Cover the open sides of feeder with turkey wire which has holes 1" X 2". About two or three inches above the base of the feeder, spread every other section apart about $1\frac{1}{2}$ inches to allow enough space for small birds to pass through. This technique will also prevent all but the most clever of the blue jays from perpetrating your feeder. But even the craftiest squirrels and blue jays



will hang by one foot and swish seeds out of the feeder with the other. Lastly, however, the blue jay and squirrel with the highest I. Q. can be distinguished from the less astute by skipping the laborious aggravation of getting their own seeds. They will wait below the feeder to catch the seeds that fall to the ground.

3. Less appealing aesthetically involves the use of a wide-mouth jar suspended horizontally from a wire that is secured at the center. A strip of foam rubber or other abrasive material will prevent the wire from slipping. This method will also discourage blue jays. Both jays and squirrels will find a method of shaking the jar so that some of the seeds fall to the ground. Some blue jays will pretend that they are a hummingbird and hover awkwardly in front of the jar picking out a well-earned seed.





4. String a long sturdy wire between two trees or poles...metal ones. From the center, hang the feeder on another wire. Again, however, a particularly agile squirrel will use the horizontal wire for a tight rope, then slide down the vertical one to the feeder.

These suggestions are only a small variety of possibilities, and other techniques are limited only by your imagination. Whatever is used, remember that squirrels can jump--and jump far! (Perhaps they are born with springs in their feet!) A feeder should be placed at least fifteen feet from tree branches, buildings and other obstacles. With time, practice, and determination, most squirrels can conquer a shorter distance.

ARTICLES OF ADULT INTEREST

We welcome notice of Conservation activities or problems for inclusion in this section of the Naturalist's Notebook .... Please let us know of your local activity so that others may be aware of your efforts and lend their support where possible ....

ROBERT C. DEWIRE DEPARTS: Bob Dewire resigned to take on a position as Naturalist with the Mid-Fairfield County Youth Museum in Westport. Bob has been an outstanding teacher and naturalist for the Center, and during the past year, as Acting Executive Director, Bob led the Center through the difficult period during the construction of the new building. Bob's good humor, energy and wide knowledge will be missed, but we thank him for returning to take charge of the Christmas Bird Census for Southeastern Connecticut that will be published in next month's newsletter.

FRIENDS OF THE CENTER: Mrs. Francis F. McGuire has renewed her Friend of Thames Science Center membership, and another new friend has joined us, Mrs. Cornelius B. Rhoads.

BOOK OF THE MONTH: The User's Guide to the Protection of the Environment by Paul Swatek, published by Ballantine Books, Inc. provides usable information on commercial products which are environmentally dangerous, suggests ecologically sound alternatives, and explains processes relevant to our daily lives such as eutrophication, economics in ecology and so on. We highly recommend it!

UNDERWATER NATURE PHOTOGRAPHY EXHIBIT: From the camera of William Booth, Ledyard, Connecticut the Science Center will be fortunate to exhibit a variety of excellent underwater photographs taken in local waters. The display will be ready for a public showing sometime in January.

TWO CHEERS FOR THE SENATE'S DEFEAT OF THE S.S.T. Why not thank your senators for voting against the giant jet, but reserve your third cheer for its final death; the issue has thus far been struck by a temporary setback.

SNOWSHOEING IN THE WHITE MOUNTAINS: If there is sufficient interest, the Outing Club will sponsor a two-day trip in February. Please telephone 443-4295.

SCIENCE CENTER WORKSHOP ON THE POLITICS OF ECOLOGY: On Thursday, January 14 at 8:00 P.M. in the Center, we will sponsor a workshop on understanding some of the political and legislative aspects of conservation. Taking Bluff Point as a case study, slides will be shown and Mrs. Mary A. Martin, State Representative 65th District (D), Mr. Sanford T. Meech, architect-conservationist, and Mrs. Constance Thurston, member of the Groton Planning Commission, will discuss the proposed full-scale development versus preservation of the last remaining natural sanctuary in this area. Open to adults and interested high school students.

OTHER PANEL DISCUSSIONS ON ECOLOGY: The Center would like to bring to your attention three panel discussions with elected state officials and environmentalists under the sponsorship of the New London YWCA. Senators-elect Peter Cashman, George Crafts and James Murphy will participate in their own areas. Dates and locations: Groton--Monday, January 11, 8 P.M., Fitch Junior High School; New London--Monday, January 18, 8 P.M., Clark Center, Mitchell College--Norwich--to be announced. All panels open to the public.

FROM THE EXECUTIVE DIRECTOR'S DESK *by ROBERT S. TREAT*

For too many of us winter becomes a joyless period of waiting, rather wearily, for the first signs of spring when we can at last come to life again. Like much of the wildlife, we like to hibernate or withdraw while the cold, nasty and blustering weather gains predominance over our bodies and souls. Although we are unable to manufacture glycerol, nature's own anti-freeze, like carpenter ants and other insects, we surround ourselves with overheated houses and stuffy automobiles which keep us from coming in contact with the raw winter air.

Yet with some understanding of the natural world and of our own nature, winter does not have to be a spiritual and physical wasteland. Regardless of the weather, it can and should be a wonderful time to be alive. First of all, it is a drastic change and that is good. We all need variation, and this helps us to appreciate the other seasons. It is about here that we stop and start to withdraw, for having been reminded of how nice warm weather is, we long for spring without taking advantage of winter. But there is much to see, touch, and even smell in this season. Without leaves you can discover the shape and contour of fields and forests completely hidden before. Whether you push yourself and snowshoe in the White Mountains or just walk past the corner lot, you have an opportunity to take in a different aspect of the world of nature: ice crystals, snowflakes, patterns of snowdrifts, snow silently falling at night, the snap of frozen branches, the smell of pine and balsam fir, and the exhilarating demands of zero cold spells. These should be welcomed, discovered, used and enjoyed.

Don't let winter pass you by. Plunge in and respond to this powerful phase of the seasonal cycle.

OUR VISIT TO THE MARSHES

ED. NOTE: These two articles were written by students of the fourth grade from the Essex Elementary School. We thought you might be interested in knowing how some schools participate with the Science Center to make their students aware of our most endangered habitat. . . the marshes.

–Photo by S. SYZ

EXPLORING THE MARSH

All the Fourth Grade of the Essex Elementary School went to the Old Lyme marshes. Mr. M. F. Roberts was our guide. He showed us where to dig. We found tiny shrimp, fiddler crabs, and shells. A fish on the shore was dead. It had died of D. D. T. poisoning. A few men were fishing along the creek.

A marsh is the land between the high and low tides. It is a safe place for small fish, shellfish, birds and small animals. The tides bring the food to the small fish and shellfish.

Our teacher and student teacher used a net from a boat along the edge of the creek. We saw the green plants and tiny things the fish and shellfish eat in the

net. If there is poison in the water these small fish will die. Debbie and Lynda caught some small fish and they are still alive. We brought back shells, crabs, and fish in sea water. We saw a huge pile of oyster shells left by the Indians three hundred years ago. It was a wonderful trip. Please save the marshes.

Rhonda Malcarne
Lynda Champion
John Walker

We met our Thames Science Center guides at the Harkness Memorial. Two of the fourth grades of the Essex Elementary School stayed with Mr. Dewire. He told us all about the ospreys. There are fewer each year because of D. D. T. The poison is in the food they eat. When the osprey's eggs are laid, the shell is soft and the baby osprey does not hatch.

Our two grades went with Mrs. Kashanski to the marshes at Waterford Beach Park. In the summer the beaches near this marsh are crowded with people and there are many boats that make the water that flows into the marsh very dirty. Many things are littered on the road and beach in the summer. On this day the tide was coming in but we could walk along the water ditches. We scooped out a few baby fish and shrimp and learned the marsh is a nursery for fish and other animals. We found mussel shells, but most of them were broken or cracked.

Then we walked along the beach and one side was a stream. There were hardly any fish in the stream. This is a marsh that is bothered by people more than the Old Lyme marshes, but it still has a lot of plants and animals.

We saw the ferry boat coming from Long Island as we walked back to the bus.

Lynne Russell
Kathy Mack
Lori Dengler

BENEATH THE ICE

by STEPHAN SYZ

The sight of a beaver lodge surrounded by ice and covered with snow on a cold winter day might make one visualize a furry family inside, curled up and asleep for the winter. But as squirrels and rabbits hop about in the bright snow searching for food, the beaver is also active in the dark world of his lodge and the water beneath the ice.

Even though the ice of the pond has frozen solid, the beaver is free to leave and enter his lodge through an underwater entrance. When a beaver feels hungry, he takes a large breath and swims out through the underwater passage to a cache of branches that he has collected in the fall and stored underwater near the lodge. He then cuts off a branch to a size he can manage and swims back with it into the lodge.

On the inside, his lodge has two levels: a feeding platform and a higher dry sleeping shelf. On the lower level he will eat bark off the branch as we would eat corn on the cob. The beaver also uses this platform as a place to stand and drip after emerging from the underwater entrance. When he has finished eating, he removes the stick from his lodge and finds another branch to eat. Sometimes, to vary his diet, he will also make excursions to dig up roots of water plants.

Even though a beaver can usually stay submerged for 3 minutes, extended trips out of the lodge under the ice may require the beaver to take a second breath, and this is usually a simple matter. The water level of a pond often goes down after the layer of ice has formed, leaving a pocket of air for the beaver to breathe. If the beaver for some reason is unable to find an air

pocket, he can simply exhale. As the bubbles go to the surface, the water acts as a filter, removing some carbon dioxide. The beaver then swims up to the trapped pocket of air and breathes it again.

No doubt you have seen pictures of trappers working in snowshoes. February is the favorite month for Homo sapiens to trap beavers. At this time the beaver's coat is the fullest and of greatest commercial value. These animals have to watch out during this season, but all of their engineering wisdom avails them of little protection from man's traps. Some beavers have become "trap wise" and have learned to set off traps with sticks.

It is not uncommon on a cold, still winter day to see what looks like smoke issuing from the peak of a beaver lodge. Despite our tremendous respect for the beaver's engineering skills, we must force our imaginations at this point to remain within the limits of reason. During construction of the lodge, beavers do not pack mud between the sticks in the center of the roof. Thus, a "flue" or "chimney" is produced for ventilation. Through this opening beavers get fresh air so that they do not suffocate in their home. What we are seeing is the water vapor coming off their hot bodies and condensing as it hits the cold outside air. Just the body heat generated by a family of beavers makes the inside lodge temperature considerably warmer.

Seldom will you find a beaver on the snow because his feet and broad tail are virtually without hair and subject to freezing. There is no danger of this happening in the beaver's underwater world, since for water to remain liquid, it must stay above freezing temperature.

January and February are also the mating season. The young kits will be born in May when the Earth once again has become warm.

FIELD NOTES

November 15--December 15

Our first snowfall of the season did not arrive until the weekend of December 12. Until then, we had scattered cold weather mixed with some rather unseasonably warm days. A few wild flowers were still in bloom until Thanksgiving, a wide variety of ducks are still present, and there have been several reports of DOVEKIES and MOCKING BIRDS.

Old Saybrook and Old Lyme: A CAROLINA WREN was seen in Old Saybrook on Nov. 22 and again on Dec. 1 and a RED-BREASTED NUTHATCH was at the same location on Dec. 6. A RED-BELLIED WOODPECKER has been seen regularly for three weeks and a single BRANT was seen at Griswold Point on Dec. 3.

Niantic, Waterford and New London: A remarkably late WATER SNAKE was seen in the natural area of the Arboretum on Nov. 21, and equally as unusual was GOLDENROD in bloom at Jennings School on Nov. 30. On Dec. 8, 5 BLUEBIRDS were sighted on Quarry Road in Waterford. Three GREAT BLUE HERONS are wintering at Millstone Point and 8 BLACK-CROWNED NIGHT HERONS were seen there during the first week of December. The first and only report of a SNOWY OWL was from Raymond Hill in Montville on Dec. 8, and on that same date, 4 or 5 REDHEAD DUCKS were sighted at Smith Cove in Quaker Hill. Four BLUEBIRDS were at Raymond Hill on Dec. 11. On Dec. 13 near the Niantic Yacht Club on Crescent Beach were SNOW BUNTINGS and several LAPLAND LONGSPURS. A BARRED OWL was sighted in the Arboretum on the evening of Dec. 13.

Groton, Mystic and Stonington: A very late WOOD THRUSH was sighted in Poquonnock on Dec. 4 and an unusual BLUE-GREY GNATCATCHER was present on the same date at Pearl Street in Mystic. At Anders Island on Dec. 9 were 8 BROWN THRASHERS feeding along the shore, and they were also seen at Mason's

Island on the same day. An OLDSQUAW and a GOLDENEYE were sighted in Mumford Cove on Dec. 14.

Contributors to this column were: Martha Capizzano, Mrs. Charles Chapin, Mrs. Nancy Flanzer, Mrs. John Gardner, Mrs. Helen Gilman, Barbara Goodwin, Robert Hernandez, Barbara Kashanski, Walter Moran, Fritz Rohn, Paul Spitzer, William Willetts.

IDENTIFICATION OF ROCKS AND MINERALS

The Thames Science Center will sponsor a series of workshops on the identification of rocks and minerals under the direction of Mr. Jerry Theiler of the Thames Valley Rock Hounds. This workshop will be for amateurs and non-professionals and will be nontechnical. Workshops will be held at the Center at 7:30 P.M. for nine consecutive Thursdays beginning January 21. Open to adults and high school students.

There is a small registration fee of $9.00 for members and $10.00 for nonmembers. If you are interested, please fill out the registration form and mail to the Center.

- -

REGISTRATION FORM
ROCKS AND MINERALS WORKSHOP

Name_____

Address_____

_____

Fee enclosed_____ Phone_____

(Please mail to Thames Science Center,
Gallows Lane, New London, Connecticut 06320.)

ACTIVITIES FOR JANUARY

Sunday, January 3...3:00 P.M. Audubon Wildlife Film, "The Real Yellowstone," presented by Mr. Fran William Hall. Palmer Auditorium, Connecticut College. Tickets available at the door.

Saturday, January 9...10:00 A.M. A Junior Members' Workshop for grades 1-3. "Making a Bird Feeder," Registration required. Limit 15 children. No fee. THIS WORKSHOP IS REPEATED THIS MONTH DUE TO POPULAR DEMAND. THOSE CHILDREN REFUSED LAST MONTH WILL HAVE FIRST CHOICE FOR REGISTRATION THIS MONTH.

Thursday, January 14...8:00 P.M. Adult Workshop. "Politics of Ecology." See page 9 for details.

Thursday, January 21...7:30 P.M. Rocks and Minerals Workshop. See page 16 for details.

Saturday, January 23...Outing Club Walk on the Bluff Head Section of the Mattabesett Trail. Meet at the Science Center, 10:00 A.M. Wear warm clothing, proper foot gear, and bring a trail lunch.

Thursday, January 28...Thames Science Center Annual Dinner Meeting. Connecticut Yankee Motor Inn, 6:30 P.M. Mr. Alexander B. Adams, former president of The Nature Conservancy, will be speaker.

NATURALIST NOTEBOOK

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ROBERT S. TREAT – *Exec. Director*
MARTHA M. CAPIZZANO – *Curator*
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The Thames Science Center is a nonprofit organization seeking a quality environment through education.

The active support of children and adults in the Science Center, its programs, activities and efforts is earnestly solicited.

ROBERT DEWIRE
Editor

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CLASSES OF MEMBERSHIP

- ☐ Annual $5 (each adult member of family)
- ☐ Family $10
- ☐ Supporting $25
- ☐ Friend of the Center $50
- ☐ Organization $10
- ☐ Junior (under 16) $3
- ☐ A special gift toward support of the Science Center effort is included $ _____

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